



Natural Heritage & Endangered Species Program

Commonwealth of Massachusetts
Division of Fisheries & Wildlife
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MASSACHUSETTS SPECIES OF SPECIAL CONCERN

Spotted Turtle (*Clemmys guttata*)

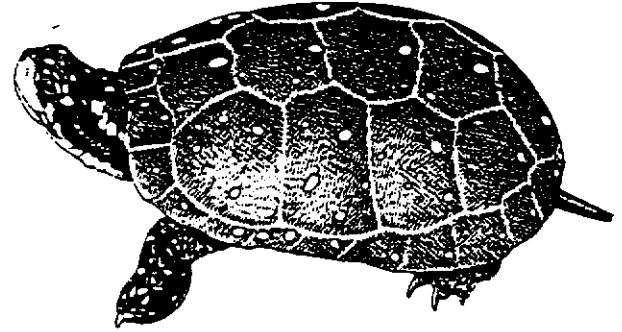
DESCRIPTION: The Spotted Turtle (also known as the polka-dot turtle) is in the genus *Clemmys* (pond turtles) and is a member of the largest turtle family, *Emyidae*. It is a relatively small turtle 8.0 -12.5 cm (3-5 in), which gets its name from the bright yellow circular spots that dot its smooth, black carapace (upper shell). The number of spots varies considerably among individuals; and their uniqueness can be used to differentiate among individuals. Hatchlings usually have one spot per scute (one of the bony, external scales that comprise the carapace). The shells of adult turtles however, may have many spots per scute or may lack spots entirely. The hinged plastron (bottom shell) is creamy yellow with large black blotches along the border. In older individuals, these blotches cover the entire plastron. The skin is gray to black with occasional yellow or orange spotting on the head, neck, and limbs. The lower surfaces of the limbs and the fleshy parts are pale salmon.

Hatchlings are blue-black and, as noted above, usually have one yellow spot on each carapacial scute; some hatchlings, however, lack spots entirely. The yellow plastron has a black central figure. The head is spotted and in some individuals the neck is spotted as well.

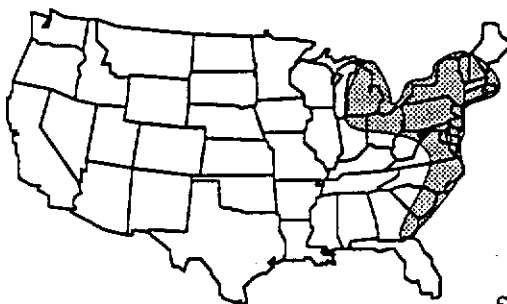
Sexual variation is similar to that of other turtle species, in that male characteristics include concave plastrons and longer, thicker tails. Spotted Turtle males have a black or dark-colored lower jaw and brown eyes while the females usually have a yellowish unmarked lower jaw and orange-red eyes

SIMILAR SPECIES IN MASSACHUSETTS: The Blanding's Turtle (*Emydoidea blandingi*) has, in contrast, small yellow flecks, not dots, on its carapace, is much larger (up to 10 inches), has a hinged plastron, and has a bright yellow throat and neck. Old, spotless Spotted Turtles may be confused with Bog Turtle (*Clemmys muhlenbergii*), but the latter has a slightly keeled carapace and a large orange blotch on each side of its face. Newly hatched Eastern Box Turtles (*Terrapene carolina*) have a single yellow spot on each scute on the carapace, but they have a granular shell texture and few markings on their face.

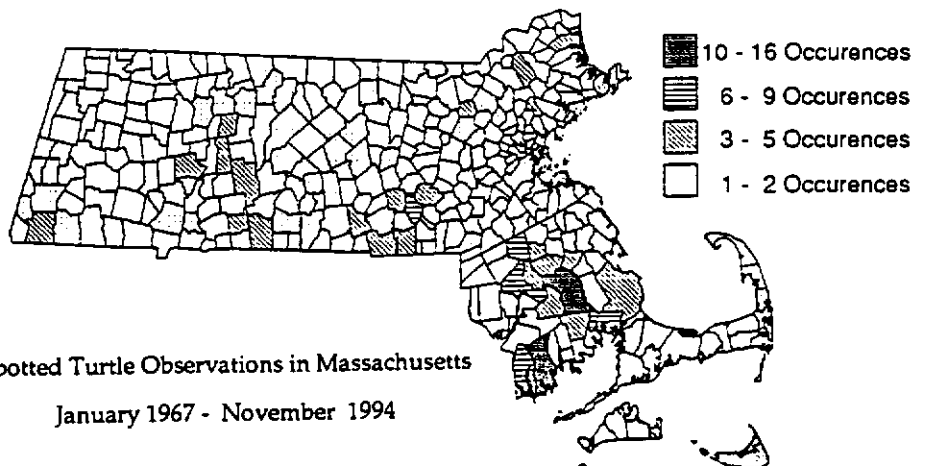
RANGE: Spotted Turtles are most commonly found in the Northeastern United States. Their range extends from Southern Maine and Quebec westward to Illinois and southeast to northern Florida.



DeGraaf, Richard M. and Rudis, Deborah D. *Amphibians and Reptiles of New England*. Amherst, MA: The University of Massachusetts, 1983.



Range of Spotted Turtle



HABITAT: Spotted Turtles inhabit a variety of wetland habitats in Massachusetts, including both forested and nonforested types. They dwell in marshy meadows, bogs, small ponds and brooks, ditches, and other shallow unpolluted bodies of water. They are also found in Red Maple and Atlantic White Cedar swamps and woodland vernal pools. This species requires a soft substrate and prefers

areas with aquatic vegetation. They often cryptically bask along the water's edge, in brush piles, overhanging vegetation and sphagnum mats, and hide in mud and detritus when disturbed.

LIFECYCLE / BEHAVIOR: In the early spring, both males and females spend a great deal of time basking. This is done both singly or in groups and takes place either on partially submerged logs, rocks, or tussocks of sedge, or on the shore line. If disturbed, they dive directly to the bottom and bury themselves in the mud. Individuals have favorite basking sites to which they return regularly throughout the season. It is also common during this time to find individuals of either sex on upland areas adjacent to wetlands. They are usually solitary while wandering on land; if disturbed they quickly withdraw into their shells, to remain so until all is quiet.

Individuals of this species alternate sitting in the sun with feeding. Generally, Spotted Turtles will bask more on cold, sunny days than on warm, cloudy one, when they feed more often. They disappear underwater late in the afternoon and spend the night at the bottom of the pond. Spotted Turtles prefer cool temperatures. During the warm summer days they are not easily found; apparently they aestivate in the mud bottom of some waterway or in a muskrat burrow or lodge.

Spotted Turtles mature at about 8 to 10 years of age. Mating occurs from March to May and generally takes place in the water. Copulation follows what is often a long (up to one hour) and frantic chase of the female by the male. Several males may pursue a single female at the same time, biting each other and sometimes the female in the process. Nesting occurs in June, with from 2 to 8 (3 to 4 on average) smooth, white, elliptical eggs laid in sunny, well-drained soil in open meadows, fields, or along roadsides. Typically, the nest-building process begins in the early evening, and as is true of all turtles, involves the hind legs and feet- usually alternately. This species digs a 2 - 2.5 in. deep hole, taking up to one hour or more to finish the task. Once finished, the female takes a short rest before depositing her eggs. During the egg laying process, the female positions each egg in the nest with her hind feet. When finished laying, she will scoop the excavated earth back onto the eggs and smooth over the covered nest by dragging her plastron over the site to minimize nest predation. The eggs incubate for 10 to 12 weeks. Hatchlings emerge from the nest in August or September in search of food and shelter in the edges of grassy, wet meadow areas and bogs. They may overwinter in the nest. Hatchlings are particularly carnivorous, hunting small land and water insects, worms, and snails. The adult Spotted Turtle is omnivorous, with a varied diet ranging from aquatic vegetation to larval amphibians, slugs, snails, insects, and worms, all of which are consumed only while the turtle is submerged in water.

POPULATION STATUS IN MASSACHUSETTS: At the turn of the century, the Spotted Turtle was considered one of the most common turtles in Massachusetts, if not the most common. Today, it is classified as a Species of Special Concern in Massachusetts. Spotted Turtles have been found in 139 Massachusetts towns. The majority of documented occurrences are in the southeast portion of the state; roughly 40% of all Massachusetts occurrences are from Bristol and Plymouth counties. There have been no recent Spotted Turtle sightings reported from Suffolk County or from the towns in the northwest corner of the state. Most (71%) of the records are of sightings of single turtles; therefore, it is yet to be determined if these individuals are part of healthy, growing populations.

MANAGEMENT RECOMMENDATIONS: Threats to the Spotted Turtle are numerous. This species is highly prized by the pet trade where they regularly command prices as high as \$400 in Japan and Europe. Illicit commercial exploitation of the species is depleting populations in many parts of their range and may be contributing to the demise of already declining populations in New England. Development and habitat fragmentation are likely the greatest threat to the Spotted Turtle. Increased residential development and construction of many new roads, altering of wetlands, and destruction of upland habitats - all severely impact the Spotted Turtle. Another factor is nest predation by skunks, raccoons, and foxes where populations have increased in recent years. Mortality as a result of road kills also takes a heavy toll on egg-laying females as they travel to their preferred nesting sites such as roadsides, sand pits, yard and foundation excavations.

Specific management recommendations to protect the habitat of this species include the following:

Timber Harvesting--In forested wetlands known to be inhabited by Spotted Turtles, harvesting should be restricted to frozen winter conditions. Regulations under the Forest Cutting Practices Act (304 CMR 11.04 8G) that limits cutting to 50% of the basal area should be strictly observed. When timber harvesting near a vernal pool, precautions should be taken in both wet and dry seasons to preserve the local environment around the pool. These precautions include not allowing heavy equipment in vernal pool depressions, not operating machinery within 50 feet of a vernal pool during mud season, and preventing any extra woody material from falling into vernal pool depressions. However, because many amphibians attach their eggs to downed woody material, any existing woody material should not be removed from the depression.

Other--In general, there should not be any alteration of the area surrounding a vernal pool, and any impact to the pool depression area should be avoided. Of particular concern is the possibility of impairing the water-retaining capability of the depression area, or altering bottom sediments which contain the eggs or other drought-resistant stages of the invertebrates which form the base of the vernal pool food chains. The area around a vernal pool should not be cleared, as leaves, twigs, and other woody materials provide many reptiles and amphibians with protection from high temperatures and from predators. As mentioned above, no woody material should be either added to or taken from the pool depression.

Conservation of Spotted Turtles likely depends first on locating viable populations and obtaining a better idea of the species' habitat needs, population dynamics, and natural history. Protecting wetland, upland corridors between wetlands, and potential nesting areas will be vital to the continued existence of one of Massachusetts's most charming reptiles.